



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,552	06/04/2007	Stephanus Gerardus Johannes Blackenborg	903-201 PCT/US	4494
23869	7590	06/30/2010	EXAMINER	
HOFFMANN & BARON, LLP 6900 JERICHO TURNPIKE SYOSSET, NY 11791			EOFF, ANCA	
		ART UNIT	PAPER NUMBER	
		1795		
		MAIL DATE	DELIVERY MODE	
		06/30/2010	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/593,552	BLACKENBORG, STEPHANUS GERARDUS JOHANNE	
<b>Examiner</b>		<b>Art Unit</b>	
ANCA EOIFF		1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 06 April 2010.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 15-17 and 19-29 is/are pending in the application.  
 4a) Of the above claim(s) 26-29 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 15-17 and 19-25 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1.) Certified copies of the priority documents have been received.  
 2.) Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

1. Claims 15-17 and 19-29 are pending, with claims 26-29 being withdrawn.  
Claims 1-14 and 18 have been cancelled.
2. The foreign priority document No. 1025774, filed in The Netherlands on March 19, 2004 was received and acknowledged. However, in order to benefit of the earlier filing date, a certified English translation is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 15-17 and 19-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "the Rz value" but there is insufficient antecedent basis for this limitation in the claim. Rz has not been defined in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 15, 19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al. (US Patent 5,246,815) in view of Stewart et al. (EP 0 427 382) and in further view of Keller et al. (US Patent 4,705,608).

With regard to claim 15, Ichimura et al. teach a process comprising the following steps of:

a) forming a photosensitive material (4) by applying the photosensitive resin compositions (A) (2) and B(3) in uniform thickness to a plastic film (1) and drying (see fig. 1 and column 6, lines 33-35), wherein the photosensitive resin composition (A) is applied first to the polyester film and it is dried (column 7, lines 62-66) and then the photosensitive resin composition (B) is applied thereto (column 7, line 67-column 8, line 1).

This step is equivalent to the steps a)-c) of the instant application, wherein  
- the plastic film (1) is equivalent to the protective film of the instant application,

- the photosensitive composition (A) is equivalent to the first resist layer of the instant application and

- the photosensitive composition (B) is equivalent to the additional resist layer of the instant application.

b) wetting the photosensitive material (4) with water and contact-bonding to a screen plate (5) with the squeegee (6) (see fig. 2 and column 6, lines 36-38).

Fig. 2 clearly shows that the screen plate (5) is applied on the photosensitive layer (B) (3), which is equivalent to the additional resist layer of the instant application.

The step of wetting with water of Ichimura et al. meets the limitation for the “additional layer to which the screen is applied being wet” of the instant application.

Fig. 2 clearly shows the squeegee (6) in direct contact with the screen plate (5).

Ishimura et al. further disclose that the squeegee (6) performs the function of “squeezing” (column 6, line 43), so the contact-bonding with a squeegee (6) is equivalent to the “pressing under pressure from a pressure-exerting element” of the instant application.

However, Ishimura et al. fail to teach the rollers of the instant application Stewart et al. teach an apparatus for applying a stencil film to a screen (abstract), wherein the stencil film may be photosensitive layers accurately pre-coated into a temporary film support (column 1, lines 33-35).

The apparatus of Stewart et al. comprises a cartridge (14) for the film (10) and the screen (3) with mesh fabric (28) (see fig. 2, column 5, lines 34-36 and column 6, lines 14-15).

The pressure roller (26) applies the film (10) to the mesh fabric (28) (see abstract). The counter-pressure device (34) may be a roller (abstract) and it is placed on the opposite side of the roller (26) and on the other side of the assembly of film (10) and mesh fabric (28) (see fig. 2).

As Stewart et al. show that a pressure roller and a counter-pressure roller are used for applying a photosensitive film to a screen, it would have been obvious to one of ordinary skill in the art to use a pressure roller and a counter-

pressure roller for applying the photosensitive material of Ichimura et al. to the screen, with a reasonable expectation of success.

The pressure roller (26) of Ichimura modified by Stewart is equivalent to the "pressure-exerting roller" of the instant application.

The counterpressure roller (34) of Ichimura modified by Stewart is equivalent to the "counter-pressure roller opposite the roller and on the other side of the assembly made up of a screen, resist layer and protective film" of the instant application.

Ichimura and Stewart do not teach that the surface of the resist layer has a smoothness  $R_z$  of 15 micrometers or less on the side of the protective film.

Keller et al. teach a process of making screen printing fabrics made with photosensitive emulsions (abstract).

The screen printing stencil may comprise fabric (1), a sensitive layer (2) and protective film (3) (see fig. 1, fig. 2 and column 5, lines 28-27). The sensitive layer may be a photosensitive emulsion or solution (column 3, lines 16-17).

Keller et al. further teach that downstream from a feeding device, a calender roller can be arranged in order to additionally smooth the back side of the sensitive layer (column 4, lines 63-65).

The feeding device of Keller is equivalent to the feed rollers (24) of Stewart et al. (see abstract, fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use calendar roller after feeding the photosensitive

film /after the feed rollers (24) in the process of Ichimura modified by Stewart, in order to smooth the back side of the photosensitive layer.

It is the examiner's position that a smooth back side of the photosensitive layer meets the limitations for a smoothness  $R_z$  of less than 15 micrometers.

With regard to claim 19, Stewart et al. teach that the pressure roller (26) may be a rubber roller (see abstract, fig. 2 and column 5, lines 57-58).

The pressure roller (26) is equivalent to the pressure-exerting roller of the instant application.

Ichimura and Stewart fail to teach the roller of claim 19.

Stewart et al. further teach the counterpressure device (34) which may be an indented or embossed roller (see abstract, fig. 2). As counterpressure device, the rollers exert pressure on the assembly formed by the film (10) and the mesh fabric (28) (see fig. 2).

As Stewart et al. show that an indented or embossed roller may be used for exerting pressure, it would have been obvious to use an indented or embossed roller as pressure roller in the process of Ichimura modified by Stewart, with a reasonable expectation of success.

An indented or embossed roller is equivalent to the roller provided with a coating material with an open-cell structure of the instant application.

With regard to claim 21, Stewart et al. teach that the roller (26) is a rubber roller (column 5, lines 57-58), which is equivalent to the compressible roller of the instant application.

With regard to claim 22, Ichimura et al. shows Example 1 wherein the photosensitive composition layer (A)/first resist forms on the polyester film a layer of 30 $\mu$ m (column 7, lines 62-66) and the photosensitive composition (B)/additional resist forms a coating film has a thickness of 1  $\mu$ m (column 7, line 67-column 8, line 1).

With regard to claim 23, Ichimura et al. shows that the photosensitive resin composition (B) must form a layer with a thickness of at least 10  $\mu$ m (column 5, lines 10-13).

While Ichimura et al. do not specifically teach a layer of composition (B) of 10  $\mu$ m, it would have been obvious to one of ordinary skill in the art at the time of the invention to obtain such a layer, based on the teaching regarding the minimum thickness required for the layer of composition (B).

The layer of photosensitive composition (B) is equivalent to the additional resist layer of the instant application.

With regard to claim 24, Ichimura et al. show that the photosensitive resin (A) is a photopolymerizable composition (see column 2, lines 30-32) and the photosensitive resin (B) comprises a polymer with photocrosslinkable units (see column 2, lines 35-36).

It is known in the art, as evidenced by Garito et al. (US Patent 4,439,514) in column 4, lines 34-36 that negative-working resists operate through bond-formation mechanisms, such as crosslinking and polymerization.

The photopolymerizable composition (A) and the photocrosslinkable composition (B) of Ichimura et al. are both negative-type resists and the limitation

of the instant application that the “additional resist layer comprises the same type of resist as the first resist layer” is met.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al. (US Patent 5,246,815) in view of Stewart et al. (EP 0 427 382) and in further view of Keller et al. (US Patent 4,705,608) as applied to claim 15 and in further view of Shirataki et al. (US Patent 4,668,329).

With regard to claim 16, Ichimura modified by Stewart and Keller teach the process of claim 15 (see paragraph 6 above), wherein the layer formed by the composition (B) is dried and then wetted with water before being bonded with the screen (see column 6, lines 33-38 ).

Ichimura, Stewart and Keller fail to teach that the layer of composition (B) may be bonded to the screen without a drying step being performed.

Shirataki et al. teach a method for applying an emulsion onto a screen-printing plate, wherein an emulsion film having an emulsion applied thereon is contacted closely with a screen (abstract).

Shirataki et al. further teach that an emulsion film (1) comprises the substrate (2) and the photosensitive emulsion film (3) in a predetermined thickness, wherein the film (3) is releaseably coated on the substrate (2). The emulsion film 1 contacts the screen-printing plate S and water as penetrating agent D is applied to the film (3) to cause it to adhere to the screen (fig. 1 and 2, column 3, lines 22-45).

The process of Shirataki et al. clearly shows that the photosensitive layer (3) is not dried after the application to the substrate (2) and before the contact with the screen S.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the photosensitive layer (B)/additional resist on top of the layer of photosensitive composition (A)/additional resist of Ichimura modified by Stewart and Keller and then to proceed to the contact-bonding with the screen, without a drying step.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al. (US Patent 5,246,815) in view of Stewart et al. (EP 0 427 382) and in further view of Keller et al. (US Patent 4,705,608) as applied to claim 15 and in further view of Reed et al. (US Patent 4,216,019).

With regard to claim 17, Ichimura modified by Stewart and Keller teach the process of claim 15 (see paragraph 6 above) but fail to disclose the electroformed screen of the instant application.

Reed et al. teach a method for producing a stencil for use in screen printing, said method comprising coating a screen mesh with a liquid photopolymerizable composition (abstract), wherein the screen mesh may be an electroformed mesh (column 3, lines 60-66).

As Reed et al. shows that an electroformed screen is used with photosensitive compositions, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an electroformed screen with the

photosensitive film of Ishimura modified by Stewart and Keller, with a reasonable expectation of success.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al. (US Patent 5,246,815) in view of Stewart et al. (EP 0 427 382) and in further view of Keller et al. (US Patent 4,705,608) as applied to claim 15 and in further view of Sano et al. (US Patent 4,302,528).

With regard to claim 20, Ichimura modified by Stewart and Keller teach the process of claim 15 (see paragraph 6 above) but fail to disclose that the roller makes contact with the screen in a tangential direction over a length less than the diameter of the openings of the screen.

Sano et al. teach a process of producing a photocurable material used as stencils for screen printing (abstract). Sano et al. further teach that a screen (2) is coated with photocurable resin (5), it is placed between the films (3) and (4) and it is passed through the rollers (1) (see figures and column 4, lines 27-35).

The rollers (1) can be arranged horizontally, vertically or in an angle (column 4, lines 40-42).

As Sano shows that rollers used for the formation of photosensitive coatings on screens can be arranged in an angle, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the roller of Ichimura modified by Stewart and Keller in an angle relative to the screen mesh, with a reasonable expectation of success.

This is equivalent to the “roller makes direct contact with the screen in the tangential direction”.

As shown in fig. 1 of the instant application, a roller contacting the screen in a tangential direction, contacts the screen over a length less than the diameter of the openings of the screen at the contact surface of the screen. Therefore, the roller of Ichimura modified by Stewart, Keller and Sano meets this limitation.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichimura et al. (US Patent 5,246,815) in view of Stewart et al. (EP 0 427 382) and in further view of Keller et al. (US Patent 4,705,608) as applied to claim 15 and in further view of Gervay (US Patent 4,937,172).

With regard to claim 25, Ichimura modified by Stewart and Keller teach the method of claim 15 (see paragraph 6 above), wherein a photopolymerizable composition (A) is coated on a substrate and then a photocrosslinkable composition (B) is coated on top of the layer (A) (see column 2, lines 25-36).

Ichimura, Stewart and Keller fail to teach the steps i) and ii) of the instant application.

However, it is conventional in the art to store photosensitive compositions in a roll form with the composition sandwiched between a support film and a cover sheet. The material is unwound from a roll and the cover sheet is removed from contact with the photosensitive composition prior to use, as shown by Gervay in column 1, lines 14-23.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to store in a roll form the photosensitive composition (A) of Ichimura modified by Stewart and Keller sandwiched between a support film and a coverset, as shown by Gervay, and to remove the coversheet prior to the use/application of the photosensitive composition (B), such steps being conventionally known for photosensitive compositions.

The cover sheet of Ichimura modified by Stewart, Keller and Gervay is equivalent to the separating sheet of the instant application.

***Response to Arguments***

11. Applicant's arguments with respect to the amended claims 15-17 and 19-25, see the Remarks filed on April 06, 2010 have been considered but are moot in view of the new grounds of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. E./  
Examiner, Art Unit 1795

/Cynthia H Kelly/  
Supervisory Patent Examiner, Art Unit 1795